

HIGHER EDUCATION IN LONDON.¹

THE London County Council wholly maintains fifteen institutions in which instruction in science, art, and technology is given. The number of students at the council's various technical institutes enrolled up to the end of March, 1908, was 6527, as compared with 6215, and the number in attendance during that month was 4436, as compared with 4152 for the corresponding period of 1907. The number of day students enrolled for the same period in 1908 was 1702, as compared with 1455 for 1907, of whom 1337 were in attendance, as compared with 1109 for 1907.

In addition to providing institutions, the council partly maintains by money grants many other educational centres offering technical, scientific, or art instruction. The grants to polytechnic and kindred institutions are based on a variety of considerations, including the provision of special instruction and the attendance at classes, but the total contribution to any one polytechnic is not in any one year to exceed 7500*l.*, or any smaller sum actually required to enable the governors to meet their liabilities for the period for which the grant is made.

The ten polytechnics to which the council makes grants are distributed all over the county, and comprise the Battersea Polytechnic, the Borough Polytechnic, and the Woolwich Polytechnic on the south, and the Birkbeck College, City of London College, Northampton Polytechnic Institute, Northern Polytechnic, Regent Street Polytechnic, Sir John Cass Technical Institute, and South-Western Polytechnic on the north side of the River Thames. The instruction given in these institutions is of a very varied character, including such subjects as geometry, building construction, mathematics, modern languages, mechanical engineering, electrical engineering, tanning, leather, paint and varnish trades, carpentry and joinery, plumbing, other building trade subjects, including brickwork and masonry, experimental physics, and organic and inorganic chemistry. Where art classes are held special attention is given to the development of the classes on craft lines. The council, by virtue of its large grants in aid, appoints representatives upon the governing body or the committee of management of the several institutions.

For the last completed year (July 31, 1907) the grants to the institutions of polytechnic rank amounted to 68,233*l.*, or 33.4 per cent. of their total income from all sources. Building grants amounting to 9401*l.* were also made in the same period, and equipment grants 9125*l.*, making a total of 86,759*l.*, or 39.6 per cent. of total income, against 40.2 per cent. for the preceding year.

Grants are made to the governors of various polytechnics and technical institutions in aid of equipment required for continuing the work of such institutions at a high point of educational efficiency, having regard to the most recent scientific technological developments.

In addition to the ten polytechnics referred to above, equipment and maintenance grants in aid of the various classes in science, art, technology, and certain other subjects were made to the governors or committees of eighteen other institutions under the council's regulations relating to aid to evening classes in science, art, and technology. The actual grants—building equipment and maintenance—to all institutions in the session 1906-7 amounted to 86,759*l.* The estimated grant for the financial year was 115,476*l.*, as compared with 110,000*l.*, the estimated grant for the year 1907-8. The total number of individual students attending institutions of polytechnic rank aided by the council during the year 1907-8 was 27,275.

Attention has also been given to the extension of facilities for such technical instruction of boys in the daytime as would serve as a connecting link between secondary and higher elementary schools and the higher technical college or university, or would offer facilities for preliminary training in the daytime for those who intend to enter the engineering and allied trades, or trades where skilled workers in artistic crafts are required. Such day technical schools are intended to be auxiliary, and not alternative, to apprenticeship, and their object is to train

future foremen, managers, and especially expert workers. So far as possible, the students will be drawn from the higher elementary and secondary schools at the age of fifteen, and they will receive special instruction during a period of two years. The curriculum will include instruction in science, drawing, modelling, English and general subjects, and workshop practice with distinctive trade bias, about half the time each week being devoted to the latter, but no attempt will be made to train fully for any particular trade. The workshop practice will be so arranged as to give the students a fair knowledge of workshop tools and processes. By means of such classes it is hoped that the gap between leaving day school and apprenticeship will be filled in such a manner as to enable the boys afterwards to acquire their practical experience readily and thoroughly, and that the boys will have learned a great deal more of the principles upon which the practice of mechanical engineering depends than could be learned by them if they entered the works at the age of fourteen.

The place of the polytechnics in any general scheme of coordination of technical education in the county, and their place in any scheme for the coordination of all types and grades of education, are matters of grave importance. The necessity for greater coordination between the work of polytechnics themselves, and the concentration of their efforts on carefully graded schemes of instruction in particular subjects, are matters which will receive careful consideration with the view of the prevention of overlapping and the determining of the sphere of work of each particular institution. The constantly improving means of communication between various parts of London will render possible coordination on these lines, as the isolation of the institutions, which has hitherto been a serious bar, no longer exists.

The importance of obtaining definite information relating to the students admitted to the polytechnics, technical institutes, and schools of art aided or maintained by the council, the age at which they enter, the duration of the period they are under instruction, the courses of study followed, their progress and the occupations they intend to follow, has long been recognised as being of great value in the solution of the problem. No systematic inquiries can at present be made so far as evening students are concerned, owing to the large amount of labour which would be entailed upon the officials of the institutes concerned, and the disinclination of the students to furnish the desired information. The governors of the various aided institutions have, therefore, been asked to supply the information for day students only.

The steady increase in the number of students for instruction in scientific, technical, and artistic subjects has necessitated careful consideration of the question of the provision of further facilities for such instruction, both immediately and in future years. In dealing with this matter the committee has been guided by the experience of past years, the extension of such work to meet the requirements of modern science and industrial development, the large increases each year in the number of students in attendance at the various institutions, the needs of particular districts, and, finally, the cost both in respect of capital and maintenance expenditure of such institutions.

The council's scholarship scheme provides for the award of about 2000 junior county scholarships annually, one-third to boys and two-thirds to girls, to those candidates who prove themselves qualified to receive secondary education. A junior county scholarship consists of free education for a period of three years, subject to renewal for two years more, provided that the scholar is satisfactory in conduct and attainments. A maintenance allowance of 6*l.*, 10*l.*, or 15*l.* a year is attached to the scholarship in cases falling within prescribed regulations. Junior county scholarships are tenable in such secondary schools as are or may be conducted by the council itself, and in such others as the council may from time to time approve for the purpose; 1899 such scholarships were awarded in the year under review.

A return is submitted annually to the council showing the incomes of the parents of junior county scholarship holders. The following table shows the incomes of the parents of scholars elected in July, 1907:—

¹ Extracted from the Annual Report of the Proceedings of the London County Council for the year ended March 31, 1908, published in December, 1908.

Annual income of parents	Boys		Girls		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Less than £160 ...	604	82.1	1062	85.5	1666	84.2
More than £160 and less than £300 ...	99	13.4	151	12	250	12.6
Above £300 ...	33	4.5	31	2.5	64	3.2
Total... ..	736	—	1244	—	1980	—

Up to 1906 the council offered 1200 probationer scholarships, without income limit, of the value of 15*l.* a year, in addition to free education. These scholarships are tenable for one or two years, and are awarded on condition that the scholars undertake to enter the teaching profession on the completion of the scholarship course. During the year the council awarded 749 such scholarships, together with twenty-eight free places at secondary schools, to students residing outside the county. From 1907 provision will be made for the award of only 800 such scholarships, and the actual number awarded each year may not amount to this number.

The council awards 100 intermediate county scholarships annually to pupils between fifteen and seventeen years of age, tenable until the end of the school year in which the pupils attain the age of eighteen, with possibilities of extension for another year. During the year seventy such scholarships were awarded to boys (including twenty commercial intermediate scholarships) and thirty to girls. The scholarships consist of free education at a cost not exceeding 25*l.* a year, together with maintenance grants rising from 20*l.* a year to 35*l.* a year. The income restriction is 400*l.* a year. The commercial scholarships are tenable in the commercial department of the Camden or Hackney Downs London County Council secondary schools.

The council awards fifty senior county scholarships or exhibitions annually; they confer free education (not exceeding 30*l.* a year) and such maintenance allowance (not exceeding 60*l.* a year), at such rate and for such periods, not exceeding four years, as the council may in each case determine. They are tenable at such universities or university colleges as the council may from time to time approve for that purpose, not more than five such scholarships awarded annually being tenable for one year at the London Day Training College. The council has also at its disposal a certain number of free places for day students at schools of the University of London. As the number of applications was not so great as in previous years, the council awarded during the year thirty-nine senior county scholarships and exhibitions, together with fourteen free places at various colleges.

It is generally admitted that the scholarship systems, both of the late Technical Education Board and of the council, have been remarkably successful. The county scholarship system has really formed a ladder to carry promising scholars from the public elementary to the secondary schools, university colleges, and universities. That the council has secured able candidates for its scholarships is shown by the fact that each year the council's scholars have obtained scholarships in the universities or institutions of university rank. Five such scholarships were obtained at Oxford and Cambridge during the year under review, and many senior county scholars have obtained degrees with honours.

On the more technical side, exceptional distinction has been gained by scholars in research work, while others have obtained good appointments owing to their technical and artistic achievements.

By the regulations of the Board of Education a secondary school "must offer to each of its scholars an education of a wider scope and higher grade than that of an elementary school, and provide a progressive course of instruction (with the requisite organisation, teaching staff, curriculum, and equipment) in the subjects necessary to a good general education upon lines suitable for scholars of

an age-range at least as wide as from twelve to sixteen or seventeen. Provision made for scholars before the age of twelve must be similarly suitable, and in proper relation to the work done in the main portion of the school." The pressing need for further inducements and facilities for children to proceed to a secondary school after leaving the elementary school has long been recognised by the council, and by means of a system of scholarships a bridge by which even the poorest children may pass from the elementary to the secondary school has been provided. The course of instruction in secondary schools, approved by the Board of Education, is framed so as to lead up to a definite standard of attainment, and not to stop short at a merely superficial introduction to any branch of instruction.

Apart from the council's own secondary schools, there are a large number of secondary schools in respect of which the council makes both maintenance and equipment grants, and which are regularly inspected by the council's officers; the total number of such schools is now fifty-two. The total amount of grants made in respect of secondary schools for the educational year ending July, 1908, was 93,970*l.*

In accordance with a scheme approved by the late Technical Education Board in 1902, the annual grant of 10,000*l.* to the University of London, to be divided equally between the four faculties of arts, science, engineering, and economics, has been continued. In addition, annual grants have been made since 1895-6, together with occasional equipment grants, to four of the constituent colleges of the University, the council thereby obtaining the right to a certain number of free places.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

It is proposed, says *Science*, to collect 1500*l.* with which to purchase the valuable chemical library of the late Prof. W. O. Atwater, and present it to Wesleyan University, Middletown, Conn. The library contains more than 5000 volumes, including about 2500 volumes of periodicals.

Two courses for teachers, arranged in connection with the London County Council Education Committee, will begin at University College on January 23. Dr. Woodland will begin a course of lectures on "The Structure and Natural History of some Common Animals," and Dr. Fritsch will begin a similar course on "Fundamental Principles of Botany." On Tuesday, February 23, Prof. Pearson will deliver a lecture on "The Purport of the Science of Eugenics." This will be the first of a course of lectures on national eugenics, to be given on Tuesdays in the second and third terms, by Prof. Pearson, Mr. Heron, and Miss Elderton.

THE annual meeting of the Public School Science Masters' Association will be held at Merchant Taylors' School, Charterhouse Square, E.C., on January 12. In the morning, at 10 a.m., an exhibition of scientific apparatus and books will be opened, and at 10.30 a business meeting will be held. The president, Sir Clifford Allbutt, K.C.B., F.R.S., will afterwards deliver an address upon the relation of general to technical science teaching. At the close of the morning session Mr. M. D. Hill, of Eton College, will speak on anthropometry in schools. The afternoon meeting will be devoted largely to a discussion upon science curricula in public schools, and the debate will be opened by the following papers:—Mr. G. F. Daniell, on the report of the British Association upon the sequence of studies in science; Mr. W. D. Eggar, of Eton College, on geography considered as a science subject; Mr. R. G. Durrant, of Marlborough College, on to what extent and at what stage should prevalent views on the nature of solution be taught in schools; and Mr. G. H. Martin, of Bradford Grammar School, on science for the "classical side." At the close of the discussion, Mr. C. I. Gardiner, of Cheltenham College, will deal with the question of the refusal of the General Medical Council to recognise public schools as institutions where medical education can be commenced.